

**ASCE – INDOT  
STRUCTURAL COMMITTEE  
MEETING NO. 91 AGENDA**

**March 11th, 2021  
9:30 am, Webex**

**NEW ITEMS**

- 1) S. Wagner introduced new committee member: Mr. Jim Lesh, PE, INDOT Bridge Design**
  
- 2) Sound Barrier (Reilman) [SPECIAL ITEM]**
  - a. J. Reilman - Recent sound barrier impact repair project. Noted locations with access door deterioration. Referenced AASHTO LRFD 9<sup>th</sup> Ed. 2020 §15.4.3 Emergency Responder and Maintenance Access “shall be provided” – include access for fire department. Some doors were missing or removed. Decision with S. Wagner to remove door access. Northeast Indianapolis area – not using doors, not concerned with removal. Fire departments are bringing tanker trucks for highway emergencies.
  - b. J. Reilman requested information from committee members about other code requirements or references. Jim requested guidance on placement, frequency, types, and liability in terms of providing doors throughout noise walls.
  - c. P. White made reference to IDM Ch. 51. Reilman considering IDM modifications.
  - d. S. Schickel recommended placing a door within 400 ft of any fire hydrant and not installing locks in the doors. The locks become ineffective, largely due to corrosion.
  - e. J. Reilman suggested jogging walls around ITS devices to better protect them from vandalism.
  - f. J. Reilman has found the door materials we’ve been using deteriorate at an accelerated rate. Suggested different materials be listed in the INDOT Specifications.
  - g. P. White suggested using lateral staggers of walls sections in lieu of doors to provide better access for maintenance forces to work behind walls.
  - h. M. McCool recommended researching local or state law or ordinance.

- i. S. Schickel: Current door coordination ongoing for downtown Indianapolis project (with IFD, INDOT maintenance). No locks, handle on highway side only, closing mechanism. (I-65/I-70 North Split).
- j. Task Group formed – White (Lead), McCool, Schickel, and Reilman. J. Reilman's goal is to provide better guidance in the IDM.
- k. M. McCool suggested to J. Reilman that he send proposed ideas to M. McCool for distribution to Structures Committee members for review comments.
- l. B. Borcharding suggested referencing 1989 AASHTO Guide Spec.
- m. RSP 620-R-463 and 463A were mentioned as well.

### **3) Concrete in RCBA [SPECIAL ITEM]**

- a. J. Reilman stated INDOT Standards Committee will be reviewing and will be changing to Class "A" as the standard. Class "C" will be permitted, but the base level will be changed to Class "A".
- b. This will take effect in September 2021.

## **AGENDA**

### **1) Review and approve Meeting 90 minutes.**

Approved

### **2) Bridge Design Conference Recap (McCool)**

- a. S. Wagner mentioned that distribution of CEUs is currently in progress.
- b. Posting of presentations to INDOT's website is in progress.
- c. M. McCool – feedback that second day was research-heavy. S. Wagner sees value in connecting research to implemented change in policy, but this depends on timing.
- d. S. Wagner mentioned that survey will ask if future conferences should be hybrid in-person/virtual. General feedback of committee was that in-person is desired, but functionality of online sessions this year was very good. However, streaming for workers who work far from Indianapolis might still be worthwhile. Setting up virtual attendance and online presentations tasked to J. Lesh.

- e. For future conferences, P. White suggested presenting on US 52 over Mud Creek (ABC).
- f. S. Wagner suggested that future Committee Agendas keep a Bridge Design Conference topics item to keep track of them and start working on them earlier.
- g. M. Wenning suggested a session that recapped current research topics to give a heads up to design community of topics in development.

### **3) Concrete mix designs (White, Nelson, Wenning, McCool, Merida)**

- a. P. White mentioned E5 admixture research. Shouldn't change too much in terms of design. Focus is on increased long-term durability.
- b. Bridge decks and RCBA are now required to use pozzolans, thus don't need surface seal. Future rehabs will still need surface seal. Surface sealers are now silane, which requires the concrete to be cured before the sealer can be placed. Additional time to wait for cure on initial build only extends MOT closure. Changing mix to not needing surface seal at initial build avoids the extra time. Changing RCBA to Class "A" does not affect this, surface seal still not required for RCBA.
- c. Future focus of mix designs: E5 / internally cured concrete, semi-lightweight, lightweight, rapid curing concrete in RCBA (currently a RSP), UHPC (non-proprietary), and rapid-cure concrete for RCBA. M. McCool will develop list of mixes to address.

### **4) Pile Design for 3-sided structures (White, Schickel, Borcharding, Hunter)**

- a. Pass

### **5) Semi-integral bent details (Wagner, McCool, White, Schickel, Borcharding, Merida)**

- a. S. Wagner – putting priority list together for considerations for rehabilitation projects. Examples will be then posted as guidance for design community.
- b. Current set of examples is a little light, per M. McCool. Task group assigned with compiling additional necessary examples.

**6) LRFD vs LFD on Rehabilitation Projects (Hunter, McCool, Eichenauer, Wenning, Arnold)**

- a. J. Hunter – INDOT engineers are now working with task group members to investigate calculations and examples to then determine recommendations.
- b. Arnold – M. Swiderski and M. Black are investigating different scenarios for deck design.
- c. Wenning – need to get back working on this.
- d. McCool – J. Hart and DJ are working on real-world steel beam project to check both LRFD and LFD. Using realistic proportions for plate girder dimensions. J. Hart then running scenarios through AASHTOWare to understand load rating implications.
- e. M. Hailat – met with M. Eichenauer. Multi-column, hammerhead, and wall piers will be investigated.

**7) Sand Bag Cofferdams (Hunter, Phillips, Merida)**

- a. J. Hunter will work with Derek to investigate this more in the future.

**8) PVC Deck Drains on RC Slab Bridges (Shergalis, Wagner, Schickel, Porter, Swiderski)**

- a. K. Shergalis (via email) – Group has been meeting. Current proposed direction is complete elimination of PVC deck drains.
- b. S. Wagner – investigating different scenarios to mitigate relatively level grade, as many slab structures were originally designed. Concern is for rehab (overlay) projects.

**9) Staged Deck Pours and Reinf. Details (McCool, White, Merida, Borcherding, Reilman)**

- a. Pass.

**10) NEXT Beams (McCool, Hunter, White, Wenning, Arnold, Wagner)**

- a. McCool – Another INDOT project has been identified to use this.

- b. M. McCool requested that P. White create a OneDrive folder for housing documentation.

**11) Steel / ABC (Arnold, Hailat, McCool, White, Eichenauer)**

- a. Pass.

**12) Bearing Pad Standards (Swiderski, White, Wenning, McCool, Schickel, Merida)**

- a. M. Swiderski will work on arranging a meeting. Not yet started.

**13) STM for End Bents (Arnold, Hailat, Hunter, Schickel)**

- a. B. Arnold – meetings have occurred. Other DOTs researched.
- b. P. White working with Dr. Williams at Purdue to get final version of STM spreadsheet. INDOT will then review scenarios to determine when it is appropriate and needed to use STM, and when it is not.
- c. More data is needed to make final recommendations. General consensus is that for typical end bents, STM is not necessary.

**14) ABC Worksheet (Schickel, Hunter, McCool, Arnold, White)**

- a. Pass.

**15) New Business**

**a. Integral Bent Details (White)**

1. Integral end bents, Method A, is not desirable. Does not provide for construction and pile driving tolerances. If piles are driven perfectly, then it's preferred as the end bent concrete becomes a single pour. If it's not, then Method B is preferred.
2. P. White would like to eliminate Method A if it's not the preferred method.
3. J. Hunter – suggested keeping it in the IDM but come up with proposed mitigation options for the case where piling was driven out of position due to boulders, etc. Some examples could be widening the cap, attaching steel to out-of-plane pile to then set beam on, etc.

4. Benefit to Method A would be schedule since bent cap becomes single pour. Method B provides redundancy in that beams are supported by group of piles and allows for pile driving tolerance.
5. Language could be added to IDM to explain concerns, pros/cons, for each method.
6. Remove item from future agendas.

**b. Prestressed Concrete Standard Beam Detail Sheets (Wenning)**

1. M. Wenning - First issue is the standard details sheets. Second issue is the lifting.
2. On the sheets, when doing shop drawing reviews, sheet is error prone and is complex for some designers.
3. Standard sheets are being used on some jobs, but not the majority.
4. It appears the sheet is not serving the original intent to simplify and make consistent amongst all designers.
5. Original comments from precaster were that some designers were not providing everything needed for fabrication on the contract plans.
6. McCool – stated that his firm tried using it but it became too difficult for internal QAQC so it is no longer used.
7. McCool suggested that INDOT post sample details sheets for prestressed beams and give minimum requirements for what needs to be on plans for the fabricators.
8. S. Wagner suggested we go through sample plans and make sure all required information is shown.
  - a. Task Group formed: J. Lesh (Lead), J. Hart, M. Wenning, and S. Wagner.
9. M. Wenning suggested INDOT post sample plans for steel bridge plans.
  - a. S. Wagner will lead task group for steel bridge sample plans.  
Requested sample plans from group.

10. Lifting locations – M. Wenning stated that current philosophy is that contractor and fabricator own the beam until it's in place. This means that fabricator is responsible for lifting loop locations and analysis. However, the ISS states the lifting locations will be in accordance with the plans. M. Wenning recommends we adjust to putting responsibility on contractor and fabricator and making specifications consistent. P. White agreed and stated we should not be including notes on plans that the position of the lifting loops has to be reviewed and approved by the EOR. Task Group – M. Wenning (lead), J. Reilman, K. Shergalis, M. Hailat.

### Recurring Business

Bridge Practice Pointers Update (Hunter, Wagner)  
Standards Committee Updates (Phillips)  
Overlay Types (Hunter, White)  
Link Slab Design and Details (Wagner, Wenning, Schickel)  
Research Needs and Innovative Ideas Update (Wagner)

### Research Projects

- Fire Damage on Concrete Bridges
- Seismic Assessment Design and Retrofit
- ABC Guide
- Strut-and-Tie Modeling
  
- Pack Rust - Mitigation Strategy Effectiveness
- Repair and Strengthening of Bridge using FRP
- A New Approach to Accelerated Fabrication of Steel Bridges: Design, Optimization, and Demonstration
- Evaluating Reserve Strength of Girder Bridges due to Bridge Rail Load Shedding
- Pedestrian Bridges -- Development of New Criteria for Design & Construction
- Seismic Evaluation of Indiana Bridge Network and Current Bridge Database for Asset Management
- Self Healing Concrete
- BIM for Bridge and Structures
- Development of Protocols for Reuse Assessment of Existing Foundations in Bridge Rehabilitation and Replacement Projects
- Pile Stability Analysis in Soft Soils
- Legal and Permit Loads Evaluation for Indiana Bridges
- Use of LRFR Methodology for Load Rating of INDOT Steel Bridges
- Improved Live Load Lateral Distribution Factors for us in Load Rating of Older Continuous and T-Beam Reinforced Concrete Bridges

- Shear and Bearing Capacity of Corroded Steel Beam Bridges and Effects on Load Rating
- Civil Infrastructure Systems Open Knowledge Network (CIS-OKN)
- Implementation Study: Continuous, Wireless Data Collection and Monitoring of the Sagamore Parkway Bridge

### Parking Lot

Long term deflections in prestressed beams  
 Special provision for high strength concrete  
 Mild reinforcement in prestressed beams (particularly 401 bars)  
 Post Tensioning Specs  
 Terminal Joint Details  
 Alternate Structure Types  
 Continuity of Prestress Concrete Beams (Heidenreich)(**TRB Research**)  
 Hydro-demolition (Wagner)  
 Fiber Wrap (Jessop)  
 High Early Strength Concrete (Nelson)  
 Expansion Joints Options (Wagner, White, Eichenauer) (**PP**)  
 Load Rating Policy and Procedures (Hunter)  
 Approach Slabs (Hailat,)  
 Bridge Deck Overhang Design (Wagner, McCool, Hunter, Eichenauer)  
 Pile Driving Recommendations  
 SIP Forms (Hunter)  
 Girder Stability (McCool, Arnold, Porter, Eichenauer, White)  
 TS-1 Railing (White, McCool)  
 Clear Deck Forms (Schickel)

# ASCE - INDOT Structures Committee

## Attendance List - Meeting No. 91

Last Name	First Name	Organization	Email	Present
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